

CLAIMS

1. A highly impact-resistant steel pipe characterized in that: the tensile strength TS of said steel pipe is 1,700 MPa or more; and the YR thereof, said  
5 YR being the ratio of the 0.1%-proof stress YS to said tensile strength TS (YS/TS), is 72% or less.

2. A highly impact-resistant steel pipe characterized in that: the tensile strength TS of said steel pipe is 1,800 MPa or more; and the YR thereof, said  
10 YR being the ratio of the 0.1%-proof stress YS to said tensile strength TS (YS/TS), is 70% or less.

3. A highly impact-resistant steel pipe characterized in that: the tensile strength TS of said steel pipe is 1,900 MPa or more; and the YR thereof, said  
15 YR being the ratio of the 0.1%-proof stress YS to said tensile strength TS (YS/TS), is 68% or less.

4. A highly impact-resistant steel pipe characterized in that: the tensile strength TS of said steel pipe is 2,000 MPa or more; and the YR thereof, said  
20 YR being the ratio of the 0.1%-proof stress YS to said tensile strength TS (YS/TS), is 66% or less.

5. A highly impact-resistant electric-resistance-welded steel pipe characterized in that: the tensile strength TS of said steel pipe is 1,700 MPa or more; and  
25 the Si amount in the steel of said steel pipe is controlled in the range from  $Mn/8 - 0.07$  to  $Mn/8 + 0.07$  (mass %).

6. A highly impact-resistant steel pipe according to any one of claims 1 to 4, characterized in that the  
30 dislocation density of said steel pipe is in the range from  $10^{10}$  to  $10^{14}/\text{mm}^{-2}$ .

7. A highly impact-resistant steel pipe according to any one of claims 1 to 5, characterized in that the steel of said steel pipe contains, in mass, 0.19 to 0.35%  
35 C, 0.10 to 0.30% Si, 0.5 to 1.60% Mn, not more than 0.025% P, not more than 0.01% S, 0.010 to 0.050% Al, 2 to 35 ppm B, and 0.005 to 0.05% Ti as indispensable

components.

8. A highly impact-resistant steel pipe according to claim 7, characterized in that the steel of said steel pipe further contains, in mass, one or more components  
5 selected from among the group of 0.005 to 0.050% Nb, 0.005 to 0.070% V, 0.005 to 0.5% Cu, 0.1 to 0.5% Mo, 0.1 to 0.5% Ni, not more than 0.01% Ca, and not more than 0.1% rare earth metals (REMs).

9. A highly impact-resistant steel pipe according  
10 to any one of claims 1 to 5, characterized in that 95% or more of the microstructure of said steel pipe is transformed into martensite by induction hardening and the prior austenite grain size number of said steel pipe is #6 or more.

15 10. A highly impact-resistant steel pipe according to any one of claims 1 to 5, characterized in that said steel pipe has a round or square sectional shape.

11. A method for producing a highly impact-resistant steel pipe according to any one of claims 1 to  
20 5, characterized in that said steel pipe containing, in mass, 0.19 to 0.35% C, 0.10 to 0.30% Si, 0.5 to 1.60% Mn, not more than 0.025% P, not more than 0.01% S, 0.010 to 0.050% Al, 2 to 35 ppm B, and 0.005 to 0.05% Ti as indispensable components, and further one or more  
25 components selected from among the group of 0.005 to 0.050% Nb, 0.005 to 0.070% V, 0.005 to 0.5% Cu, 0.1 to 0.5% Mo, 0.1 to 0.5% Ni, not more than 0.01% Ca, and not more than 0.1% rare earth metals (REMs), is subjected to induction heating and then water quenching.

30 12. A method for producing a highly impact-resistant steel pipe according to claim 11, characterized in that the cooling rate of said water quenching is 100°C/sec. or higher.

35 13. A method for producing a highly impact-resistant steel pipe according to claim 11 or 12, characterized in that the cooling water temperature of said water quenching is 35°C or lower.